



AIR MONITOR CORPORATION

Email/FAX TRANSMISSION

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TO:	Sal Ferrara Advanced Burner Technologies	FROM:	Matt Maragos Sales Development Manager Air Monitor Corporation 178 Mine Lake Court Raleigh, NC 27615
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REMARKS: ☒ URGENT ☒ FOR YOUR REVIEW ☐ PLEASE COMMENT

RE: Improving Plant Performance and Efficiency with Air Monitor's Accurate Individual Burner Airflow Measurement (IBAM) Systems
Air Monitor Proposal Number: 092203-2.1

Sal,

Per your request, please find this proposal for Air Monitor's burner airflow measurement systems for use at Intermountain Power.

Please note that wind tunnel testing is included in the pricing below. Also, we would recommend mounting the transmitters and AUTO-purge systems off the front plate of the burners. The transmitters and AUTO-purge system will be grouped into single enclosures per burner deck.

Air Monitor's systems provide accurate combustion airflow measurement to each burner. Air Monitor systems provide the means to accurately balance and/or bias burner stoichiometries to lower NO_x levels, reduce LOI, and increase overall boiler performance.

Benefits of Air Monitor's Accurate Burner-to-Burner Secondary Airflow (SA) Measurement:

- Accurate SA measurement to each burner will allow for airflow balancing or biasing on a burner by burner basis.
- Air Monitor equipment provides accurate measurement through 10:1 turndown, resulting in improved emissions at all operating loads.
- Air Monitor's Individual Burner Airflow Measurement will provide for improved burner stoichiometry and improved plant performance through decreased NO_x, improved LOI, etc.
- Air Monitor's Patented IBAM™ Probe will be provide an accurate measurement suitable for future use in conjunction with a neural network or other online combustion optimization systems.

Air Monitor's IBAM probes have been successfully implemented in thousands of burners through North America. For the burners at Intermountain, we will need to perform wind tunnel testing to determine the proper set up and orientation characteristics.

The burner wind tunnel test has a matrix of sleeve damper position, swirler angle and load (which will establish total SA to burner). As the operational ranges of the sleeve damper position, swirler angle and load vary from facility to facility, we are providing a quotation for a typical burner test. A typical burner wind tunnel test has a matrix of sleeve damper position, swirler angle and load that will cover a minimum of 48 test points of varying damper position, swirler angle and load.

Based on our testing experience, this matrix (range) will be sufficient for most operational configurations. If it is found that the operational range extends outside of our standard matrix, this can be expanded. Expansion of the wind tunnel testing may result in additional cost. The wind tunnel testing is included with the IBAM probes.

The following equipment will be required for the burner airflow measurement:

Burner drawings will be required at time of order.

Individual Burner Airflow Measurement Systems

IBAM Burner Probes (2 per Burner)

The IBAM burner probe, derived from the patented VOLU-probe technology, utilizes the Pitot-Fechheimer principle together with its patented chamfered total pressure port and is ideal for both new burner installations and existing burner retrofits. Constructed entirely of 316 Stainless Steel, the IBAM burner probe is suited for clean or harsh and particulate laden applications, operating at temperatures ranging from -20 to 900°F.

VELTRON II Computer w/AUTO-purge III/sp (1 per burner)

The VELTRON II is an Ultra-Low Differential Pressure and "smart" flow computer. All VELTRON II's are equipped with a 2x16 liquid crystal display (LCD) for use during configuration and calibration. During normal operation, one output is displayed (differential pressure), scaleable in user selectable format and units of measure. The VELTRON II is furnished with an automatic zeroing circuit capable of electronically adjusting the zero at predetermined time intervals while simultaneously maintaining the output signal. The VELTRON II with its high level of accuracy and automatic zeroing circuitry, can maintain linear output signals on applications requiring velocity turndown of 10 to 1 (equal to a velocity pressure turndown of 100 to 1). The VELTRON II is also equipped with AUTO-purge management that initiates and times the purging cycle. The AUTO-purge III is a high pressure purge circuit that applies high pressure, high volume air back through the total pressure and static pressure sensing lines to clean sensing manifolds and sensors, preventing build-up of flyash, dirt and other particles which may be present in the air stream. The AUTO-purge III incorporates brass and copper construction for all wetted tubing, fittings and valves. Standard input power to the VELTRON II with AUTO-purge III is 24V(AC or DC) with optional 120VAC input available. The system is supplied as standard installed in a painted steel NEMA 4 enclosure.

The VELTRON II w/AUTO-purge III/sp systems will be grouped into NEMA 4 enclosures to complement the placement of the burners (e.g., six per enclosure).

Price for Forty-Eight (48) IBAM Systems\$263,040.

Wind tunnel testing and burner mock up is required and included in the above price (wind tunnel testing is \$16,080).

Factory technician start up assistance is included in the above prices for this project. An Air Monitor Factory technician will be on site to ensure that the equipment is properly connected and calibrated (spanned). The factory technician will train on site personnel in the operation of Air Monitor products.

All prices in United States Dollars.

Shipping Schedule: 6-10 weeks after approval of submittal drawings or order release. Submittal drawings will be completed within 3 weeks after receipt of order.
Terms: Net 30 Days.
F.O.B: Santa Rosa, CA.

This proposal is valid for sixty days.

We look forward to working with you on all of your airflow measurement projects. We hope that you will allow us the opportunity to supply systems that will provide the accuracy and repeatability that is necessary to improve your plant performance and reduce NO_x emissions.

We thank you for your interest in Air Monitor's systems. If you have any questions or comments, please do not hesitate to contact me.

Sincerely,

Matt Maragos
Air Monitor Corporation

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